**I CLAIM:**

1. A laser energy delivery device suitable for delivery of relatively long wavelength laser energy to a biological tissue in an aqueous medium comprising:

(a) an elongate hollow sheath having an open aperture at distal end portion thereof and a closed proximal end, the sheath defining a lumen and a gas inlet port spaced from the proximal end of the sheath and in open communication with the lumen; and

(b) a laser energy conduit having a proximal end adapted for connection to a laser energy source capable of generating light having a wavelength of at least about 1,300 nanometers and a distal end adapted for delivery of laser energy emitted from the energy source to a tissue site;

the laser energy conduit being disposed within the lumen of the sheath and passing through the closed proximal end of the sheath; the distal end of the laser energy conduit being positioned at the open distal end of the sheath; and the gas inlet port being adapted for connection to a gas delivery source for concomitant infusion of a biologically compatible gas through the lumen and the open aperture at distal end portion of the sheath while laser energy is emitted from the distal end portion of the laser energy conduit.

2. The laser energy delivery device in accordance with claim 1 wherein the long wavelength laser energy comprises laser light having a wavelength in the range of about 1,300 nanometers to about 11,000 nanometers.

3. The laser energy delivery device in accordance with claim 1 wherein the laser energy conduit comprises an optical fiber.

4. The laser energy delivery device in accordance with claim 3 wherein the optical fiber is a low-OH optical fiber capable of delivering laser light having a wavelength in the range of about 1,300 nanometers to about 2,500 nanometers.

5. The laser energy delivery device in accordance with claim 1 wherein the laser energy conduit is a wave guide.

6. The laser energy delivery device in accordance with claim 1 wherein the open aperture is substantially coaxial with the laser energy conduit.

7. The laser energy delivery device in accordance with claim 1 wherein the open aperture is offset from the longitudinal axis of the laser energy conduit.

8. The laser energy delivery device in accordance with claim 1 wherein the open aperture is situated at the distal end of the hollow sheath.

9. The laser energy delivery device in accordance with claim 1 wherein the open aperture is situated in a sidewall of the hollow sheath.

10. The laser energy delivery device in accordance with claim 1 wherein the open aperture is occluded with a balloon.

11. The laser energy delivery device in accordance with claim 1 wherein the open aperture is situated at the distal end of the hollow sheath and is occluded with a balloon.

12. The laser energy delivery device in accordance with claim 1 wherein the open aperture is offset from the distal end of the sheath and is occluded with a balloon.

13. The laser energy delivery device in accordance with claim 1 wherein the proximal end of the sheath is provided with a handpiece; and the laser energy conduit extends through the handpiece.

14. The laser energy delivery device in accordance with claim 13 wherein the gas inlet port is spaced from the handpiece.

15. The laser energy delivery device in accordance with claim 13 wherein the gas inlet port is defined by the handpiece.

16. The laser energy delivery device in accordance with claim 15 wherein the gas inlet port includes a valve.

17. The laser energy delivery device in accordance with claim 16 wherein the valve is a needle valve.

18. The laser energy delivery device in accordance with claim 15 wherein the sheath includes a distal end portion having an inside diameter larger than the inside diameter of the remainder of the sheath.

19. The laser energy delivery device in accordance with claim 15 wherein the distal end of the sheath is flared.

20. The laser energy delivery device in accordance with claim 15 wherein the sheath is bent at angle $\phi$ from the axis of the handpiece.

21. The laser energy delivery device in accordance with claim 20 wherein the angle $\phi$ is in the range of about 20 degrees to about 120 degrees.

22. The laser energy delivery device in accordance with claim 20 wherein the angle $\phi$ is in the range of about 30 degrees to about 90 degrees.

23. The laser energy delivery device in accordance with claim 1 wherein the sheath is a stainless steel tube.

24. The laser energy delivery device in accordance with claim 1 wherein the sheath is a semi-rigid plastic tube.

25. The laser energy delivery device in accordance with claim 1 wherein the sheath is a nickel-titanium shape-memory alloy tube.

26. The laser energy delivery device in accordance with claim 1 further comprising a long wavelength laser energy source operably connected to the proximal end of the laser energy conduit.

27. The laser energy delivery device in accordance with claim 26 wherein the long wavelength laser energy source is a Holmium:YAG laser energy source.

28. A method of delivering relatively long wavelength laser energy to a body tissue in an aqueous liquid medium comprising the steps of:

(a) providing an endoscope defining at least one channel having an inner diameter, the channel having an open distal end and an open proximal end;

(b) providing a laser energy delivery system which comprises

a source of laser energy having a wavelength of at least about 1,300 nanometers;

an elongate hollow sheath defining a lumen, and having an open aperture at distal end portion thereof and a closed proximal end, and further defining a gas inlet port spaced from the closed proximal end of the sheath and in open communication with the lumen, the sheath having an outer diameter smaller than the inner diameter of the endoscope channel and the lumen having an inner diameter;

an elongate laser energy conduit within the lumen of the sheath and extending through the closed proximal end of the lumen, the laser energy conduit having an outer diameter smaller than the inner diameter of the lumen of the sheath, having a proximal end adapted for connection to the source of laser energy and a distal end adapted to emit the laser energy supplied by the laser energy source, the distal end of the laser energy conduit being positioned at the open distal end of the lumen of the sheath; the laser energy source being operably connected to the proximal end of the laser energy conduit; and

a source of biocompatible gas operably connected to the gas inlet port;

(c) positioning the endoscope within a body tissue lumen or cavity such that the open distal end of the endoscope channel is disposed generally opposite a tissue site in need of laser energy treatment;

(d) positioning the sheath of the laser energy delivery system through the endoscope channel such that the distal end of the sheath extends through the open distal end of the endoscope channel and contacts a body tissue site in need of laser energy treatment;

(e) supplying gas from the source of biocompatible gas through the gas inlet port and lumen of the sheath to the tissue site, at a pressure and flow rate sufficient to displace fluid from the tissue site in contact with the open distal end of the sheath and maintain a substantially fluid-free region between the distal end of the laser energy conduit and the body tissue; and

(f) supplying long wavelength laser energy from the laser energy source through the distal end of the laser energy conduit to the tissue through the substantially liquid-free tissue region for a period of time and at a laser energy intensity sufficient to treat the tissue.

29. The method in accordance with claim 28 wherein the long wavelength laser energy source supplies laser energy having a wavelength in the range of about 1,300 nanometers to about 11,000 nanometers.

30. The method in accordance with claim 28 wherein the laser energy conduit comprises a low-OH optical fiber and the laser energy source

supplies laser energy having a wavelength in the range of about 1,300 nanometers to about 2,500 nanometers.

31. The method in accordance with claim 30 wherein the laser energy source is a Holmium:YAG laser energy source.

32. The method in accordance with claim 28 wherein the biocompatible gas is selected from the group consisting of nitrogen, helium, argon, carbon dioxide, air, and a combination thereof.

33. The method in accordance with claim 28 wherein the treatment comprises vaporization or ablation of tissue from the body tissue site.

34. The method in accordance with claim 33 wherein the treatment comprises vaporization or ablation of prostate tissue to relieve or lessen a urethral restriction due to an enlarged prostate.

35. The method in accordance with claim 28 wherein the treatment comprises cauterization of tissue at the body tissue site.

36. The method in accordance with claim 28 wherein the treatment comprises shrinking the tissue at the body tissue site.

37. A method for delivering laser energy having a wavelength of at least about 1,300 nanometers to a selected tissue site in a lumen which comprises displacing liquid present at the selected tissue site with a bubble of biocompatible gas and concomitantly irradiating the selected tissue site with the laser energy through the bubble.